

## Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID: SSSPTA1302CXP

**PASSWORD :**

TERMINAL (ENTER 1, 2, 3, OR ?):2

Enter NEWS followed by the item number or name to see news on that specific topic.

All use of STN is subject to the provisions of the STN Customer agreement. Please note that this agreement limits use to scientific research. Use for software development or design or implementation of commercial gateways or other similar uses is prohibited and may

result in loss of user privileges and other penalties.

FILE 'HOME' ENTERED AT 09:54:57 ON 28 MAR 2007

=> file fsta  
COST IN U.S. DOLLARS  
SINCE FILE  
ENTRY  
TOTAL  
SESSION  
0.21  
0.21  
FULL ESTIMATED COST

FILE 'FSTA' ENTERED AT 09:55:13 ON 28 MAR 2007  
COPYRIGHT (C) 2007 International Food Information Service

FILE LAST UPDATED: 27 MAR 2007 <20070327/UP>  
FILE COVERS 1969 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN THE BASIC INDEX (/BI) FIELD <<<

=> s phytosterol and antioxidant  
270 PHYSTOSTEROL  
8091 ANTIOXIDANT  
L1 7 PHYSTOSTEROL AND ANTIOXIDANT

=> d 11 all 1-7

L1 ANSWER 1 OF 7 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2006:N1162 FSTA  
TI Healthful lipids.  
AU Akoh, C. C.; Oi-Ming Lai  
CS PO Box 3489, Champaign, IL 61826-3489, USA; AOCS Press. Tel.  
+1-217-359-2344. Fax +1-217-351-8091. E-mail [orders\(a\)aocts.org](mailto:orders(a)aocts.org).

SO www.aocs.org. Price USD 202.00.  
(2005), 762pp. ISBN 1-893997-51-0  
DT Book  
LA English  
AB This book examines the latest technological advances and emerging technologies in processing and analysis of healthful lipids. The book is aimed at graduate students, food researchers, people working in the fields of product development, food processing, nutrition, dietetics, quality assurance, genetic engineering of oil crops, oil processing, fat substitutes and lipid biotechnology, and also food industry professionals seeking background and advanced knowledge on lipids. The book is divided into 6 parts: Part 1 - Current regulatory issues (2 chapters); Part 2 - Processing and emerging analytical technologies (6 chapters); Part 3 - Nutrition and biochemistry (8 chapters); Part 4 - Enzyme and lipid biotechnology (5 chapters); Part 5 - Oxidation (2 chapters); and Part 6 - Applications of healthful lipids (7 chapters). Chapters include: Trans fatty acids in foods and their labeling regulations; Safety, regulatory aspects, and public acceptance of genetically modified lipds; Production, processing and refining of oils; Novel hydrogenation for low trans fatty acids in vegetable oils; Analysis of lipids by new hyphenated techniques; Supercritical fluid processing of nutritionally functional lipids; Short-path distillation for lipid processing; Fat crystallization technology; Dietary fatty acids and their influence on blood lipids and lipoproteins; Essential fatty acid metabolism to self-healing agents; Dietary n-6:n-3 fatty acid ratio and health; CLA sources and human studies; Lipids with antioxidant properties;  $\gamma$ -Linolenic acids - the health effects; Phytosterols and phytosterol esters; The effects of eicosapentaenoic acid in various clinical conditions; Lipase reactions applicable to purification of oil- and fat-related materials; Enzymatic synthesis of symmetrical triacylglycerols containing polyunsaturated fatty acids; Patent review on lipid technology; Genetic

enhancement and modification of oil-bearing crops; Genetically engineered oils; Emulsion technologies to produce oxidative stable emulsions containing n-3 FA; Chemistry for oxidative stability of edible oils; Structured and speciality lipids; Lipids in infant formulas and human milk fat substitutes; Cocoa butter, cocoa butter equivalents, and cocoa butter replacers; Margarine and baking fats; Nutritional characteristics of diacylglycerol oil and its health benefits; Plant stanol ester as a cholesterol-lowering ingredient of Benecol® foods; and Palm oil, its fractions, and components.

CC N (Fats, Oils and Margarine)  
CT ANALYTICAL TECHNIQUES; BIOCHEMISTRY; BIOTECHNOLOGY; BOOKS; HEALTH FOODS; LIPIDS; NOVEL FOODS; NUTRITION; OILS; BIOTECHNOLOGICALLY DERIVED FOODS

L1 ANSWER 2 OF 7 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2006:G0989 FSTA  
TI Compositions and methods to deliver consumable water dispersible phytosterols.  
IN Franke, W. C.  
PA Franke, Cranbury, NJ, USA  
SO United States Patent Application Publication, (2006)  
PI US 2006121174 A1  
PRAI US @@@@-634140 20041208  
DT Patent  
LA English  
AB Compositions and methods are described for delivering water-dispersible phytosterol esters useful in the reduction of serum cholesterol when consumed as part of a heart healthy diet. Phytosterol esters can be incorporated into aqueous-based dry foods and beverages that are extracted or reconstituted with hot water. The composition comprises a mixture of phytosterol esters, a surfactant and, optionally, an oil-soluble antioxidant, and needs no prior emulsification, homogenization or drying to render the phytosterol esters water-dispersible in the recommended food applications.

CC G (Catering, Speciality and Multicomponent Foods)  
CT DRIED FOODS; ESTERS; PATENTS; STEROLS; PHYTOSTEROLS

L1 ANSWER 3 OF 7 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2006:A0058 FSTA  
TI Qualitative and quantitative comparison of the cytotoxic and apoptotic potential of phytosterol oxidation products with their corresponding cholesterol oxidation products.  
AU Ryan, E.; Chopra, J.; McCarthy, F.; Maguire, A. R.; O'Brien, N. M.  
CS Correspondence (Reprint) address, N. M. O'Brien, Dep. of Food & Nutr. Sci., Univ. Coll., Cork, Republic of Ireland. Fax +353 21 4270244.  
E-mail nob(a)ucc.ie  
SO British Journal of Nutrition, (2005), 94 (3) 443-451, many ref.  
ISSN: 0007-1145  
DT Journal  
LA English  
AB Phytosterols contain an unsaturated ring structure and therefore are susceptible to oxidation under certain conditions. Whilst the cytotoxicity of the analogous cholesterol oxidation products (COP) has been well documented, the biological effects of phytosterol oxidation products (POP) have not yet been fully ascertained. The aim of this study was to examine the cytotoxicity of  $\beta$ -sitosterol oxides and their corresponding COP in a human monocytic cell line (U937), a colonic adenocarcinoma cell line (CaCo-2) and a hepatoma liver cell line (HepG2).  $7\beta$ -Hydroxysitosterol,  $7$ -ketositosterol, sitosterol- $3\beta$ , $5\alpha$ , $6\beta$ -triol and a sitosterol- $5\alpha$ , $6\alpha$ -epoxide- $5\beta$ , $6\beta$ -epoxide (6:1) mixture were found to be cytotoxic to all 3 cell lines employed; the mode of cell death was by apoptosis in the U937 cell line and necrosis in the CaCo-2 and HepG2 cells.  $7\beta$ -Hydroxysitosterol was the only  $\beta$ -sitosterol oxide to cause depletion in glutathione, indicating that POP-induced apoptosis may

not be dependent on the generation of an oxidative stress. A further aim was to assess the ability of the antioxidants  $\alpha$ -tocopherol,  $\gamma$ -tocopherol and  $\beta$ -carotene to modulate POP-induced cytotoxicity in U937 cells. Whilst  $\alpha/\gamma$ -tocopherol protected against 7 $\beta$ -hydroxycholesterol-induced apoptosis, they did not confer protection against 7 $\beta$ -hydroxysitosterol- or 7-ketositosterol-induced toxicity, indicating that perhaps COP provoke different apoptotic pathways than POP.  $\beta$ -Carotene did not protect against COP- or POP-induced toxicity. In general, results indicate that POP have qualitatively similar toxic effects to COP. However, higher concentration of POP are required

to elicit comparable levels of toxicity.

CC A (Food Sciences)  
CT CELL CULTURE; CHOLESTEROL; OXIDATION; STEROLS; TOXICITY; ANTIOXIDANT COMPOUNDS; APOPTOSIS; CELL LINES; CHOLESTEROL OXIDES; CYTOTOXICITY; SITOSTEROL

L1 ANSWER 4 OF 7 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2004:M0637 FSTA  
TI Bakery products enriched with phytosterol esters,  $\alpha$ -tocopherol and  $\beta$ -carotene decrease plasma LDL-cholesterol and maintain plasma  $\beta$ -carotene concentrations in normocholesterolemic men and women.  
AU Quilez, J.; Rafecas, M.; Brufau, G.; Garcia-Lorda, P.; Megias, I.; Bullo, M.; Ruiz, J. A.; Salas-Salvado, J.  
CS Correspondence (Reprint) address, J. Salas-Salvado, Unitat de Nutr. Humana, Fac. de Med. i Ciencies de la Salut de Reus, Univ. Rovira i Virgili, 43201 Reus, Spain. E-mail jss(a)fmcs.urv.es  
SO Journal of Nutrition, (2003), 133 (10) 3103-3109, 34 ref.  
ISSN: 0022-3166  
DT Journal  
LA English  
AB Effects of consuming croissants and magdalenas (Spanish muffins) enriched with sterol esters,  $\alpha$ -tocopherol and  $\beta$ -carotene on plasma lipid and fat-soluble antioxidant concentration in normocholesterolaemic, habitual consumers of bakery products following their usual diet and lifestyle were investigated. Using a randomized, double-blind, placebo-controlled design, the control (C) group (n = 29) received 2 pieces daily (standard croissant and muffin) and the sterol ester (STE) group (n = 28), the same products with sterol esters added (3.2 g/day) for 8 wk. Total and LDL cholesterol (LDL-C) decreased in the STE group by 0.24mM ( $P < 0.01$ ) and 0.26mM ( $P < 0.005$ ), respectively, whereas these variables did not change in the control group. The total difference in total and LDL-C changes between groups was 0.38mM (8.9%) and 0.36mM (14.7%), respectively ( $P < 0.001$ ). Within-group changes in HDL cholesterol, triacylglycerol or lipoprotein(a) concentration did not differ. Similarly, within-group changes over time in plasma tocopherol and carotenoid concentration did not differ between groups. Results suggest that bakery products are excellent carriers for phytosterols, and their consumption is associated with a decrease in plasma total and LCL-C concentration, with no changes in  $\alpha$ -tocopherol and  $\beta$ -carotene. The ability of bakery products to include sufficient quantities of  $\beta$ -carotene to compensate for a potential deficiency, and the fact that their efficacy was not associated with time of day at which they were consumed were noted.  
CC M (Cereals and Bakery Products)  
CT BAKERY PRODUCTS; CAKES; CAROTENES; HEALTH; STEROLS; TOCOPHEROLS; Na -TOCOPHEROL; Nb -CAROTENE; CROISSANTS; HYPOLIPAEMIC ACTIVITY; MUFFINS; PHYTOSTEROLS  
L1 ANSWER 5 OF 7 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2004:A0830 FSTA  
TI Antioxidant effects of phytosterol and its components.  
AU Yoshida, Y.; Niki, E.

CS Human Stress Signal Res. Cent. (HSSRC), Nat. Inst. of Advanced Ind. Sci. & Tech. (AIST), Midorigaoka, Ikeda, Osaka 563-8577, Japan. E-mail yoshida-ya(a)aist.go.jp

SO Journal of Nutritional Science and Vitaminology, (2003), 49 (4) 277-280, 18 ref.

ISSN: 0301-4800

DT Journal

LA English

AB Antioxidant effects of phytosterol and its components,  $\beta$ -sitosterol, stigmasterol and campesterol, against lipid peroxidation were examined by making a comparison with 2,2,5,7,8-pentamethyl-6-chromanol (PMC). It was found that these compounds exerted antioxidant effects on the oxidation of methyl linoleate in solution. PMC had a greater antioxidative effect than phytosterol, campesterol and  $\beta$ -sitosterol, which had greater effects than stigmasterol. Phytosterol also suppressed the oxidation and consumption of  $\alpha$ -tocopherol in  $\beta$ -linoleoyl- $\gamma$ -palmitoyl phosphatidylcholine (PLPC) liposomal membranes, and the effects were more significant than for dimyristoyl phosphatidylcholine of the same concentration. Stigmasterol accelerated the oxidation of both methyl linoleate in solution and PLPC liposomal membranes in aqueous dispersions. This effect was ascribed to the oxidation of allylic hydrogens at the 21- and 24-positions. Results show that phytosterol acts chemically as an antioxidant and a modest radical scavenger, and acts physically as a stabilizer in the membranes.

CC A (Food Sciences)

CT LIPIDS; OXIDATION; STEROLS; ANTIOXIDATIVE ACTIVITY; PEROXIDATION; PHYTOSTEROLS; RADICAL SCAVENGING ACTIVITY

L1 ANSWER 6 OF 7 FSTA COPYRIGHT 2007 IFIS on STN

AN 2003:N0770 FSTA

TI Chemopreventive potential of minor components of olive oil against cancer.

AU Sotiroudis, T. G.; Kyrtopoulos, S. A.; Xenakis, A.; Sotiroudis, G. T.

CS Inst. of Biol. Res. & Biotech., Nat. Hellenic Res. Foundation, 48 Vas. Constantinou Ave., 11635 Athens, Greece. Tel. +302107273893. Fax +302107273758. E-mail tsotir(a)eie.gr

SO Italian Journal of Food Science, (2003), 15 (2) 169-185, many ref.

ISSN: 1120-1770

DT General Review

LA English

SL Italian

AB Epidemiological studies have suggested that a diet rich in olive oil is associated with a reduced risk of a number of common cancers. In the last decade significant advances have been made in the understanding of how virgin olive oil may work to prevent cancer. A plethora of olive oil constituents have been identified as effective agents against the initiation, promotion and progression of multistage carcinogenesis. These include minor constituents such as the well-studied tocopherol and carotenoid antioxidants, a number of very efficient antioxidant phenols (simple phenols-hydroxytyrosol, tyrosol- and linked phenols-secoiridoids, lignans-), the triterpene hydrocarbon squalene and the phytosterol  $\beta$ -sitosterol. Recent studies have revealed that the major antioxidant components of olive oil can also exert important non-antioxidant biological functions. In this review, the antioxidative activity of a number of minor olive oil components is presented and evidence of their ability to interfere with and modulate cellular pathways important in carcinogenesis is reviewed. The implications of these properties for their cancer chemopreventive potential is discussed.

CC N (Fats, Oils and Margarine)

CT HEALTH; OLIVE OILS; OXIDATION; REVIEWS; ANTICARCINOGENICITY; ANTIOXIDATIVE ACTIVITY

L1 ANSWER 7 OF 7 FSTA COPYRIGHT 2007 IFIS on STN

AN 2003:A0664 FSTA  
TI Antioxidant activity of phytosterols, oryzanol, and other phytosterol conjugates.  
AU Tong Wang; Hicks, K. B.; Moreau, R.  
CS 2312 Food Sci. Bldg., Iowa State Univ., Ames, IA 50011, USA. E-mail tongwang(a)iastate.edu  
SO Journal of the American Oil Chemists' Society, (2002), 79 (12) 1201-1206, 21 ref.  
ISSN: 0003-021X  
DT Journal  
LA English  
AB Antioxidative and antipolymerization activities of phytosterols, oryzanol, ferulic acid esters of sterols, corn fibre oil and rice bran oil were investigated. Commercial soybean oil and distilled soybean oil methyl esters (FAME) were used as substrates for both oxidative stability determination and viscosity analysis after the oil was oxidized. Results showed that the oxidative stability of oil was significantly affected by the type of compounds tested and their concentration (12-60  $\mu$ mol/5 g oil); at low concentration, the various compounds did not improve the oxidative stability of the oil substrates, although the viscosity tended to be reduced slightly. The antipolymerization activity of steryl ferulate was higher at higher concentration than at lower concentration, and steryl ferulate was more effective than oryzanol. Rice bran oil showed very good antioxidative and antipolymerization activities.  
CC A (Food Sciences)  
CT ANTIOXIDANTS; AROMATIC COMPOUNDS; CORN OILS; OILS VEGETABLE; OXIDATION; STEROLS; ANTIOXIDATIVE ACTIVITY; ORYZANOLS; PHYTOSTEROLS; POLYMERIZATION; RICE BRAN OILS

=> s phytosterols and antioxidants  
572 PHYTOSTEROLS  
8053 ANTIOXIDANTS  
L2 34 PHYTOSTEROLS AND ANTIOXIDANTS

=> d 12 all 1-34

L2 ANSWER 1 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2007:N0524 FSTA  
TI Application of pulsed electric fields at oil yield and content of functional food ingredients at the production of rapeseed oil.  
AU Guderjan, M.; Elez-Martinez, P.; Knorr, D.  
CS Correspondence address, D. Knorr, Department of Food Biotechnology and Food Processing Engineering, University of Technology Berlin, Koenigin-Luise-Street 26, 14195 Berlin, Germany. Tel. +49 30 314 71250. Fax +49 30 832 7663. E-mail Dietrich.Knorr(a)tu-berlin.de  
SO Innovative Food Science and Emerging Technologies, (2007), 8 (1) 55-62  
ISSN: 1466-8564  
DT Journal  
LA English  
AB In this study the effect of pulsed electric fields (PEF) on oil yield and content of functional food ingredients of rapeseed (*Brassica napus*) is discussed. For the analysis hulled and non-hulled rapeseed was used and solvent extraction or pressing for oil separation and oil quality were compared. In dependency of applied PEF treatment intensity (42-84 kJ kg.sup.-1.sup.1) oil yield increased by pressing as well as solvent extraction from and higher concentrations of tocopherols, polyphenols, total antioxidants and phytosterols were measured in the oil. No effect on unsaturated properties and saponification values were investigated, and higher concentration of chlorophyll and free fatty acids in the oil were determined. Besides PEF treatment and oil separation method the hulling of rapeseed has an obvious effect on oil quality.

Industrial relevance: The application of pulsed electric fields as a nonthermal food processing technology is interesting for increased extraction processes of plant materials. For consumers gentle processed products get more and more interesting. Results of this study show, that pulsed electric fields can be used as a pretreatment before oil separation to increase oil yield and content of functional food ingredients under gentle conditions. All rights reserved, Elsevier.

CC N (Fats, Oils and Margarine)  
CT ANTIOXIDANTS; ELECTRICITY; EXTRACTION; HUSKING; POLYPHENOLS; RAPESEED OILS; RAPESEEDS; STEROLS; TOCOPHEROLS; BRASSICA NAPUS; HULLING; PHYTOSTEROLS; PULSED ELECTRIC FIELDS

L2 ANSWER 2 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2007:N0483 FSTA  
TI Functional lipid characteristics of Turkish Tombul hazelnut (*Corylus avellana* L.).  
AU Alasalvar, C.; Amaral, J. S.; Shahidi, F.  
CS TUBITAK Marmara Res. Cent., Food Inst., PO Box 21, 41470 Gebze, Kocaeli, Turkey. Tel. +90 (0)262 6773272. Fax +90 (0)262 6412309. E-mail Cesarettin.Alasalvar(a)mam.gov.tr  
SO Journal of Agricultural and Food Chemistry, (2006), 54 (26) 10177-10183, 66 ref.  
ISSN: 0021-8561

DT Journal  
LA English  
AB The quality of crude oil extracted from Tombul (Round) hazelnut, grown in the Giresun province of Turkey, was evaluated for its fatty acid, triacylglycerol (TAG), tocol and phytosterol compositions. Oleic acid contributed 82.78% to the total fatty acids, followed by linoleic, palmitic and stearic acids. Among 12 TAG separated, 11 were identified (where P = palmitoyl; S = stearoyl; O = oleoyl; and L = linoleoyl): LLL, OLL, PLL, OOL, POL, OOO, POO, PPO, SOO and PSO. The main components were OOO (71.31%), OOL (12.26%) and POO (9.45%), reflecting the high content of oleic acid present in hazelnut oil. 7 tocol isoforms (4 tocopherols and 3 tocotrienols) and 8 phytosterols as well as cholesterol were positively identified and quantified; among these,  $\alpha$ -tocopherol (40.40 mg/100 g) and  $\beta$ -sitosterol (134.05 mg/100 g) were predominant in hazelnut oil and contributed 78.74 and 81.28% to the total tocots and phytosterols present, respectively. Tocotrienols were detected in small amounts (1.02% of total tocots). It is concluded that crude hazelnut oil extracted from Turkish Tombul hazelnut serves as a good source of nutrients and bioactive and health-promoting components.

CC N (Fats, Oils and Margarine)  
CT ANTIOXIDANTS; FATTY ACIDS; OILS VEGETABLE; STEROLS; TERPENOIDS; TRIGLYCERIDES; VITAMINS; HAZELNUT OILS; PHYTOSTEROLS; TOCOLS; TRIACYLGLYCEROLS

L2 ANSWER 3 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2007:N0409 FSTA  
TI Functional lipid characteristics of cherry laurel seeds (*Laurocerasus officinalis* Roem.).  
AU Alasalvar, C.; Udaya Wanasinghe; Ying Zhong; Shahidi, F.  
CS TUBITAK Marmara Res. Cent., Food Inst., PO Box 21, 41470 Gebze/Kocaeli, Turkey. Tel. +90-262-677-3272. Fax +90-262-641-2309. E-mail cesarettin.alasalvar(a)mam.gov.tr  
SO Journal of Food Lipids, (2006), 13 (3) 223-234  
ISSN: 1065-7258  
DT Journal  
LA English  
AB The seeds of 2 native cherry laurel varieties (Kiraz and Findik), grown in the city of Giresun, Turkey, were compared in terms of their lipid content, lipid classes, fatty acids and fat soluble bioactives (tocots and phytosterols). Lipid content of the seeds in Kiraz and Findik var.

were 38.10 and 41.61%, respectively. The proportion of nonpolar and polar lipids ranged from 87.91 to 88.27% and from 11.73 to 12.09%, respectively. Triacylglycerol, and acetone mobile polar lipid and phospholipid, were the only nonpolar and polar lipids detected, respectively. No significant ( $P > 0.05$ ) differences were found between the 2 samples among lipid classes. 13, 9 and 4 major fatty acids were detected in crude, neutral and polar lipids, respectively. Among those identified fatty acids, oleic acid was the predominant fatty acid (62.42-64.18% in crude oil, 56.60-60.11% in neutral lipid and 78.23-79.55% in polar lipid) followed by linoleic acid and palmitic acid in all lipid fractions. 8 tocol isoforms (4 tocopherols and 4 tocotrienols) and 3 common phytosterols were positively identified and quantified; among these,  $\gamma$ -tocopherol (0.55-0.69 mg/100 g oil) and  $\beta$ -sitosterol (192.5-222 mg/100 g oil) were predominant in both seed oils. Tocotrienols were detected in trace amounts (<0.01 mg/100 g oil). Significant differences ( $P < 0.05$ ) existed between Kiraz and Findik var. among tocopherols and phytosterols. These results suggest that both cherry laurel seeds serve as good sources of lipid, monounsaturated fatty acids and bioactives. Therefore, both cherry seed oils might be considered as functional food ingredients and nutraceuticals.

CC N (Fats, Oils and Margarine)  
CT ANTIOXIDANTS; FATTY ACIDS; FRUITS SPECIFIC; LIPIDS; OILSEEDS;  
STEROLS; TERPENOIDS; VITAMINS; CHERRY LAUREL; PHYTOSTEROLS;  
TOCOLS; VAR

L2 ANSWER 4 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2006:N1325 FSTA  
TI A comparison of the antioxidant properties of steryl ferulates with tocopherol at high temperatures.  
AU Nystrom, L.; Achrenius, T.; Lampi, A. M.; Moreau, R. A.; Piironen, V.  
CS Department of Applied Chemistry and Microbiology, University of Helsinki,  
P.O. Box 27, Latokartanonkaari 11, FI-00014 Helsinki, Finland. Tel. +358 9  
191 58282. Fax +358 9 191 58475. E-mail laura.nystrom(a)helsinki.fi  
SO Food Chemistry, (2007), 101 (3) 947-954  
ISSN: 0308-8146  
DT Journal  
LA English  
AB Steryl ferulates (esters of phytosterols and ferulic acid) have long been studied for their health-promoting properties, partially owing to their capacity to inhibit oxidation. The good heat-stability of rice bran oil has been attributed to its high content of steryl ferulates and tocopherols. It has been suggested that these compounds have a synergistic effect as antioxidants. In this model experiment, we determined the capacity of sitostanyl ferulate and  $\alpha$ -tocopherol (alone or as a mixture) to prevent polymerization of high oleic sunflower oil at 100 and 180°C. The formation of polymers was significantly reduced at both temperatures and by both antioxidants, as well as their mixture, though no synergistic effect was seen. Further, we followed the decrease in antioxidant levels and found that sitostanyl ferulate was degraded at a lower rate than  $\alpha$ -tocopherol, indicating that sitostanyl ferulate is a promising antioxidant for high temperature applications. All rights reserved, Elsevier.  
CC N (Fats, Oils and Margarine)  
CT ESTERS; ORGANIC ACIDS; OXIDATION; PHENOLS; STEROLS; SUNFLOWER OILS;  
TEMPERATURE; TOCOPHEROLS; Na -TOCOPHEROL; ANTIOXIDATIVE ACTIVITY; FERULIC  
ACID; SITOSTANOL; TEMP.

L2 ANSWER 5 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2006:N1141 FSTA  
TI Characteristics of structured lipid prepared by lipase-catalyzed acidolysis of roasted sesame oil and caprylic acid in a bench-scale continuous packed bed reactor.  
AU Byung Hee Kim; Akoh, C. C.  
CS Correspondence address, C. C. Akoh, Dep. of Food Sci. & Tech., Univ. of

Georgia, Athens, GA 30602-7610, USA. Tel. (706) 542-1067. Fax (706) 542-1050. E-mail cakoh(a)uga.edu

SO Journal of Agricultural and Food Chemistry, (2006), 54 (14) 5132-5141, 31 ref.

DT Journal

LA English

AB Structured lipid (SL) was prepared from roasted sesame oil and caprylic acid (CA) by Rhizomucor miehei lipase-catalysed acidolysis in a bench-scale continuous packed bed reactor. Total incorporation and acyl migration of CA in the SL were 42.5 and 3.1 mol %, respectively, and the half-life of the lipase was 19.2 days. The SL displayed different physical and chemical properties, less saturated dark brown colour, lower viscosity, lower melting and crystallization temperature ranges, higher melting and crystallization enthalpies, higher smoke point, higher saponification value and lower iodine value than those of unmodified sesame oil. The oxidative stability of purified SL was lower than that of sesame oil. There were no differences in the contents of unsaponifiables including tocopherols and phytosterols. However, total sesame lignans content was decreased in SL due to the loss of sesamol when compared to sesame oil. Most of the 70 volatiles present in roasted sesame oil were removed from SL during short-path distillation of SL. Results indicate that the characteristics of the SL are different from those of the original sesame oil in several aspects except for the contents of tocopherols and phytosterols.

CC N (Fats, Oils and Margarine)

CT ANTIOXIDANTS; COLOUR; CRYSTALLIZATION; FATTY ACIDS; FLAVOUR COMPOUNDS; LIPIDS; MELTING; OILS VEGETABLE; OXIDATION; PHENOLS; STEROLS; TEMPERATURE; THERMOPHYSICAL PROPERTIES; TOCOPHEROLS; VISCOSITY; VOLATILE COMPOUNDS; CAPRYLIC ACID; ENTHALPY; IODINE VALUES; LIGNANS; OXIDATIVE STABILITY; PHYTOSTEROLS; SAPONIFICATION; SESAME OILS; SESAMOL; STRUCTURED LIPIDS; TEMP.

L2 ANSWER 6 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2006:N0802 FSTA

TI Specialty palm oil products and other specialty vegetable oil products.

IN Yuen May Choo; Ah Ngan Ma; Tan Sri Datuk Yusof Basiron; Chiew Wei Puah

PA Yuen May Choo, Selangor, Malaysia

SO United States Patent Application Publication, (2006)

PI US 2006088644 A1

PRAI MY @@@@-200403558 20040901

DT Patent

LA English

AB Vegetable oil products, particularly palm oil products, are described together with a supercritical fluid extraction method used for their manufacture. The products contain 1 or more compounds of vegetable oil origin from the following groups: monoacylglycerols, diacylglycerols, triacylglycerols, carotenes, tocots, phytosterols, squalene and free fatty acids.

CC N (Fats, Oils and Margarine)

CT ANTIOXIDANTS; CAROTENES; EXTRACTION; LIPIDS; OILS VEGETABLE; PALM OILS; PATENTS; STEROLS; TERPENOIDS; VITAMINS; PHYTOSTEROLS; SQUALENE; SUPERCRITICAL FLUID EXTRACTION; TOCOTS; VEGETABLE OILS

L2 ANSWER 7 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2006:N0053 FSTA

TI Simultaneous determination of carotenoids, tocopherols, and  $\gamma$ -oryzanol in crude rice bran oil by liquid chromatography coupled to diode array and mass spectrometric detection employing silica C30 stationary phases.

AU Stoeggl, W.; Huck, C.; Wongyai, S.; Scherz, H.; Bonn, G.

CS Correspondence (Reprint) address, C. Huck, Inst. of Analytical Chem. & Radiochem., Leopold-Franzens Univ., Innsbruck, Austria. Fax +43-512-507-2965. E-mail christian.w.huck(a)uibk.ac.at

SO Journal of Separation Science, (2005), 28 (14) 1712-1718  
ISSN: 1615-9304  
DT Journal  
LA English  
AB Crude rice bran oil contains tocopherols (vitamin E), carotenoids (vitamin A) and phytosterols, which possess antioxidative activities and show promising effects as preventive and therapeutic agents. The aim of this work was to develop methods to separate and detect tocopherols, carotenoids and  $\gamma$ -oryzanol in one single run and to compare C18 and C30 silica stationary phases. Comparing RP-LC on silica C18 and C30, higher resolution between all target compounds was achieved using the C30 stationary phase. Methanol was used as eluent and elution strength was increased by addition of tert-butyl methyl ether for highly hydrophobic analytes such as  $\gamma$ -oryzanol. Detection was accomplished using diode array detection from 200 to 500 nm. Absorbance maximum were at 295 nm for tocopherols, 324 nm for  $\gamma$ -oryzanol and 450 nm for carotenoids. Compounds were also characterized and identified on the basis of their UV spectra. Both RP systems were coupled to MS (LC-MS) using an atmospheric pressure chemical ionization interface.

CC N (Fats, Oils and Margarine)

CT ANTIOXIDANTS; AROMATIC COMPOUNDS; CAROTENOIDS; HIGH PERFORMANCE LIQUID CHROMATOGRAPHY; MASS SPECTROSCOPY; OILS VEGETABLE; TOCOPHEROLS; LC; MS; ORYZANOLS; RICE BRAN OILS

L2 ANSWER 8 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2006:M1245 FSTA

TI Changes in nutraceutical lipid components of rice at different degrees of milling.

AU Tae-Yeoul Ha; Soon-Nam Ko; Sun-Mi Lee; Hak-Ryul Kim; Soo-Hyun Chung; Sung-Ran Kim; Hye-Hyun Yoon; In-Hwan Kim

CS Correspondence (Reprint) address, In-Hwan Kim, Dep. of Food & Nutr., Coll. of Health Sci., Korea Univ., Chungneung-Dong, Sungbuk-Gu, Seoul 136-703, Korea. Tel. +822 940 2855. Fax +822 941 7825. E-mail K610in(a)chollian.net

SO European Journal of Lipid Science and Technology, (2006), 108 (3) 175-181  
ISSN: 1438-7697

DT Journal

LA English

AB Effect of degree of milling on the concentration of several nutraceutical lipid components in rice was investigated. Concentration of tocols (i.e. tocopherol

+ tocotrienol), phytosterol,  $\gamma$ -oryzanol, octacosanol and squalene were examined in milled rice and brown rice. As the degree of milling increased, the lipids content and the total tocol content decreased ( $P < 0.05$ ). The relative percentages of  $\alpha$ -tocopherol,  $\alpha$ -tocotrienol and  $\gamma$ -tocotrienol differed ( $P < 0.05$ ) between brown rice and milled rice. The most abundant sterol was  $\beta$ -sitosterol, representing 50-56% of the total sterols content in all samples analysed. The relative percentages of the sterol isomers did not differ with degree of milling. As the degree of milling increased, concentration

of  $\gamma$ -oryzanol, squalene and octacosanol in rice decreased ( $P < 0.05$ ).

CC M (Cereals and Bakery Products)

CT ANTIOXIDANTS; AROMATIC COMPOUNDS; MILLING; RICE; STEROLS; TERPENOIDS; VITAMINS; ORYZANOLS; PHYTOSTEROLS; SQUALENE; TOCOLS

L2 ANSWER 9 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2006:J1178 FSTA

TI Cape gooseberry. A golden fruit of golden future.

AU Fawzy Ramadan, M.; Morsel, J. T.

CS Biochem. Dep., Fac. of Agric., Zagazig Univ., 44519 Zagazig, Egypt

SO Fruit Processing, (2005), No. 6, 396-400, 15 ref.

ISSN: 0939-4435

DT Journal  
LA English  
AB The chemical composition of the cape gooseberry was investigated to serve as a basis for nutritional evaluation of the berries as a raw material for use in functional beverages and foods. Seeds were isolated from berries, the pulp/peel fraction was lyophilized and lipids were isolated and purified. Fatty acid composition and phytosterols were studied using GC. Fat soluble vitamins and  $\beta$ -carotene were identified and quantified using normal phase HPLC. The juice yield of cape gooseberries was high (72% without enzyme treatment, with an increase of 2-3% after enzymic treatment) and had high contents of antioxidants, vitamin C and polyphenols. The fat content of whole berries was also investigated. Whole berries were found to contain 2% oil, of which seed oil comprised 90% and pulp/peel oil 10%. The main fatty acid was linoleic acid, followed by oleic, palmitic, stearic and  $\gamma$ -linolenic acid. The oil was also found to be rich in phytosterols, carotenes, tocopherols and phylloquinones. The fruits can be stored in a dry atmosphere for several months enabling processing away from the place of harvest. It is concluded that cape gooseberries could be utilized to produce fruit juices and beverages rich in tocopherols and  $\beta$ -carotenes and the residues after processing used to produce oils.

CC J (Fruits, Vegetables and Nuts)  
CT FRUIT JUICES; FRUITS SPECIFIC; FUNCTIONAL FOODS; OILS VEGETABLE; CAPE GOOSEBERRIES

L2 ANSWER 10 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2006:H2895 FSTA

TI The science ... behind the words.

CS RSSL

SO Soft Drinks International, (2006), May, 38-39  
ISSN: 0953-4776

DT Journal

LA English

AB This article presents scientific explanations and definitions for the following ingredients used in soft drinks: antioxidants; anthocyanins; carotenoids; prebiotics and probiotics; phytosterols and plant sterols;  $\omega$ -3-fatty acids; and L-carnitine.

CC H (Alcoholic and Non-Alcoholic Beverages)

CT SOFT DRINKS; INFORMATION; INGREDIENTS

L2 ANSWER 11 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2006:A0058 FSTA

TI Qualitative and quantitative comparison of the cytotoxic and apoptotic potential of phytosterol oxidation products with their corresponding cholesterol oxidation products.

AU Ryan, E.; Chopra, J.; McCarthy, F.; Maguire, A. R.; O'Brien, N. M.

CS Correspondence (Reprint) address, N. M. O'Brien, Dep. of Food & Nutr. Sci., Univ. Coll., Cork, Republic of Ireland. Fax +353 21 4270244.  
E-mail nob(a)ucc.ie

SO British Journal of Nutrition, (2005), 94 (3) 443-451, many ref.  
ISSN: 0007-1145

DT Journal

LA English

AB Phytosterols contain an unsaturated ring structure and therefore are susceptible to oxidation under certain conditions. Whilst the cytotoxicity of the analogous cholesterol oxidation products (COP) has been well documented, the biological effects of phytosterol oxidation products (POP) have not yet been fully ascertained. The aim of this study was to examine the cytotoxicity of  $\beta$ -sitosterol oxides and their corresponding COP in a human monocytic cell line (U937), a colonic adenocarcinoma cell line (CaCo-2) and a hepatoma liver cell line (HepG2). 7 $\beta$ -Hydroxysitosterol, 7-ketositosterol, sitosterol-3 $\beta$ ,5 $\alpha$ ,6 $\beta$ -triol and a sitosterol-5 $\alpha$ ,6 $\alpha$ -epoxide-sitosterol-5 $\beta$ ,6 $\beta$ -epoxide (6:1) mixture were found to be

cytotoxic to all 3 cell lines employed; the mode of cell death was by apoptosis in the U937 cell line and necrosis in the CaCo-2 and HepG2 cells. 7 $\beta$ -Hydroxysitosterol was the only  $\beta$ -sitosterol oxide to cause depletion in glutathione, indicating that POP-induced apoptosis may not be dependent on the generation of an oxidative stress. A further aim was to assess the ability of the antioxidants  $\alpha$ -tocopherol,  $\gamma$ -tocopherol and  $\beta$ -carotene to modulate POP-induced cytotoxicity in U937 cells. Whilst  $\alpha$ / $\gamma$ -tocopherol protected against 7 $\beta$ -hydroxycholesterol-induced apoptosis, they did not confer protection against 7 $\beta$ -hydroxysitosterol- or 7-ketositosterol-induced toxicity, indicating that perhaps COP provoke different apoptotic pathways than POP.  $\beta$ -Carotene did not protect against COP- or POP-induced toxicity. In general, results indicate that POP have qualitatively similar toxic effects to COP. However, higher concentration of POP are required to elicit comparable levels of toxicity.

CC A (Food Sciences)

CT CELL CULTURE; CHOLESTEROL; OXIDATION; STEROLS; TOXICITY; ANTIOXIDANT COMPOUNDS; APOPTOSIS; CELL LINES; CHOLESTEROL OXIDES; CYTOTOXICITY; SITOSTEROL

L2 ANSWER 12 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2005:M0793 FSTA

TI Effect of heat pretreatment on the functional constituents of rice germ.

AU Yun-Ju Kwon; Ki-Teak Lee; Tae-Moon Yun; Sang-Won Choi

CS Correspondence (Reprint) address, Sang-Won Choi, Dep. of Food Sci. & Nutr., Catholic Univ. of Daegu, Gyeongbuk 712-702, Korea. Tel. +82-53-850-3525. Fax +82-53-850-3504. E-mail swchoi(a)cu.ac.kr

SO Journal of Food Science and Nutrition, (2004), 9 (4) 330-335, 24 ref.  
ISSN: 1226-332X

DT Journal

LA English

AB Effects of roasting, steaming or microwave heating on functional components of rice germ were determined. All types of heat pretreatment initially increased rice germ oil yield, this was followed by a decrease as processing time increased. Yield of rice germ oil varied between types of pretreatment. Fatty acids composition of rice germ oil following different heat pretreatments was unchanged. Level of  $\alpha$ -tocopherol in rice germ oil increased by approx. 1.5x after 3 min of roasting or microwave heating compared to the control, then decreased with increasing treatment time. However, concentration of  $\alpha$ -tocopherol in rice germ oil gradually decreased with increasing steaming time. Concentration of 3 phytosterols ( $\beta$ -sitosterol, stigmasterol, ergosterol) decreased with increasing roasting or steaming time, but increased up to approx. 15% after 3 min of microwave heating, decreasing thereafter. Level of  $\gamma$ -oryzanol in rice germ oil decreased gradually with increasing heat pretreatment time. Level of  $\gamma$ -aminobutyric acid (GABA) in rice germ decreased gradually with increasing roasting time, but increased by approx. 2x after 10 min of steaming, decreasing slowly thereafter. During microwave heating, GABA content increased after 3 min then decreased. Results suggest that microwave heating may be the most suitable processing method to preserve functional components present in rice germ.

CC M (Cereals and Bakery Products)

CT ANTIOXIDANTS; AROMATIC COMPOUNDS; FATTY ACIDS; MICROWAVES; OILS  
VEGETABLE; ORGANIC ACIDS; ORGANIC NITROGEN COMPOUNDS; RICE; ROASTING;  
STEAMING; STEROLS; AMINOBUTYRIC ACID; ORYZANOLS; PHYTOSTEROLS;  
RICE GERM OILS

L2 ANSWER 13 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2005:G0555 FSTA

TI The function junction.

AU Wade, M. A.

SO Prepared Foods, (2005), 174 (4, Suppl., Nutra Solutions Supplement)  
NS2-NS4, NS6, NS8, NS10

ISSN: 0747-2536  
DT Journal  
LA English  
AB Findings of the Prepared Foods 2005 R&D trends survey entitled 'Functional foods and beverages', which highlights ingredient trends, marketing and regulatory factors, is discussed with reference to: ambiguity in the food industry over the definition of a functional food; survey participants' definitions of a functional food; isoflavones, soy proteins and their beneficial health effects; functional ingredients expected by food manufacturers to become more important in functional foods (antioxidants, dietary fibre and organic ingredients were ranked as the top 3); the challenges of developing organic foods; the importance of confirming the beneficial health effects of a product to increase consumer confidence; marketing opportunities (dominated by products aimed at improving cardiovascular health, followed by weight loss and reducing cholesterol); antioxidants as the ingredient most food manufacturers expect to become more important to functional foods (e.g. lycopene); and phytoestrogens and phytosterols.  
CC G (Catering, Speciality and Multicomponent Foods)  
CT FOOD INDUSTRY; FUNCTIONAL FOODS; MARKETING; MARKET RESEARCH

L2 ANSWER 14 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2005:A2029 FSTA  
TI Plant sterols in food technology.  
AU Rudzinska, M.; Uchman, W.; Wasowicz, E.  
CS Inst. of Food Tech. of Plant Origin, Agric. Univ. of Poznan, 60-624 Poznan, Poland. E-mail magdar(a)au.poznan.pl  
SO Acta Scientiarum Polonorum - Technologia Alimentaria, (2005), 4 (1) 147-156, 28 ref.  
ISSN: 1644-0730  
DT Journal  
LA English  
SL Polish  
AB Phytosterols in foods are discussed, with particular reference to: phytosterols as compounds of food; food technology processes as sources of phytosterol oxidation products; and inhibition of phytosterols oxidation by antioxidants.  
CC A (Food Sciences)  
CT ANTIOXIDANTS; STEROLS; PHYTOSTEROLS

L2 ANSWER 15 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2004:N0174 FSTA  
TI Changes in chemical composition of pumpkin seeds during the roasting process for production of pumpkin seed oil. Part 1: non-volatile compounds.  
AU Murkovic, M.; Piironen, V.; Lampi, A. M.; Kraushofer, T.; Sontag, G.  
CS Inst. for Food Chem. & Food Tech., Tech. Univ. Graz, A-8010 Graz, Austria. Tel. +43-316-8736495. Fax +43-316-8736971. E-mail michael.murkovic(a)tugraz.at  
SO Food Chemistry, (2004), 84 (3) 359-365, 27 ref.  
ISSN: 0308-8146  
DT Journal  
LA English  
AB In the production of pumpkin seed oil, pumpkin seeds are roasted prior to extraction of oil. Changes in the composition of pumpkin seeds during this roasting process were studied. Milled seeds were roasted for up to 60 min, and analysed for levels of fatty acids, vitamin E, phytosterols and secoisolariciresinol, a lignan. Levels of linoleic acid in the seeds decreased on roasting from 54.6 to 54.2%. After roasting for 40 min, vitamin E contents were reduced by 30% but after 60 min returned to pre-roasting levels. Sterol content was increased by roasting from 1710 to 1930 µg/g, attributed to modification of the seed meal during roasting which affects the extraction process. Secoisolariciresinol present at 3.8 µg/g in unroasted pumpkin

seeds was undetectable on roasting for ≥20 min.

CC N (Fats, Oils and Margarine)

CT ANTIOXIDANTS; FATTY ACIDS; OILSEEDS; PHENOLS; ROASTING; STEROLS; TERPENOIDS; VITAMINS; LIGNANS; PHYTOSTEROLS; PUMPKIN SEEDS; VITAMIN E

L2 ANSWER 16 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2004:N0168 FSTA

TI Radical scavenging activity of black cumin (*Nigella sativa* L.), coriander (*Coriandrum sativum* L.), and niger (*Guizotia abyssinica* Cass.) crude seed oils and oil fractions.

AU Ramadan, M. F.; Kroh, L. W.; Moersel, J. T.

CS Inst. fuer Lebensmittelchem., Tech. Univ. Berlin, D-13355 Berlin, Germany. Tel. +49 (0) 30 314 728 13. Fax +49 (0) 30 314 728 23. E-mail hassanienmohamed(a)hotmail.com

SO Journal of Agricultural and Food Chemistry, (2003), 51 (24) 6961-6969, 56 ref.

ISSN: 0021-8561

DT Journal

LA English

AB Crude vegetable oils are usually oxidatively more stable than the corresponding refined oils. Tocopherols, phospholipids (PL), phytosterols, and phenols are the most important natural antioxidants in crude oils. Processing of vegetable oils could induce the formation of antioxidants. Black cumin (*Nigella sativa*), coriander (*Coriandrum sativum*), and niger (*Guizotia abyssinica*) crude seed oils were extracted with n-hexane and the oils were further fractionated into neutral lipids (NL), glycolipids (GL), and PL. Crude oils and their fractions were investigated for their radical scavenging activity (RSA) toward the stable galvinoxyl radical by electron spin resonance (ESR) spectrometry and toward 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical by a spectrophotometric method. Coriander seed oil and its fractions exhibited the strongest RSA compared to black cumin and niger seed oils. The data correlated well with the total content of PUFA, unsaponifiables, and PL, as well as the initial peroxide values of crude oils. In overall ranking, RSA of oils fractions showed similar patterns wherein the PL exhibited greater activity to scavenge both free radicals followed by GL and NL, respectively. The positive relationship observed between the RSA of crude oils and their colour intensity suggests the Maillard reaction products may have contributed to the RSA of seed oils and their polar fractions. The results demonstrate the importance of minor components of crude seed oils on their oxidative stability, which influences their food value and shelf life. As part of the effort to assess the potential of these seed oils, the information is also of importance in processing and utilizing the crude oils and their by-products.

CC N (Fats, Oils and Margarine)

CT OILS VEGETABLE; OXIDATION; OXIDATIVE STABILITY; RADICAL SCAVENGING ACTIVITY; VEGETABLE OILS

L2 ANSWER 17 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2004:A0100 FSTA

TI Metabolic effects of plant sterols and stanols (review).

AU Jong, A. de; Plat, J.; Mensink, R. P.

CS Correspondence (Reprint) address, R. P. Mensink, Dep. of Human Biol., Univ. of Maastricht, PO Box 616, 6200 MD Maastricht, Netherlands. Tel. +31-43-3881742. Fax +31-43-3670976. E-mail r.mensink(a)hb.unimass.nl

SO Journal of Nutritional Biochemistry, (2003), 14 (7) 362-369, 72 ref.

ISSN: 0955-2863

DT General Review

LA English

AB Health and physiological effects of dietary phytosterols and phytostanols are reviewed. Aspects considered include: cholesterol metabolism; effects of plant sterols and stanols on sterol metabolism

(absorption of plant sterols and stanols, effects on intestinal cholesterol absorption, lipid and lipoprotein metabolism, and development and regression of atherosclerosis); and other effects of plant sterols and stanols (influence on absorption of fat-soluble antioxidants, colon and prostate cancer, membrane properties and the immune system).

CC A (Food Sciences)

CT HEALTH; HUMAN PHYSIOLOGY; REVIEWS; STEROLS; PHYSIOLOGICAL EFFECTS; PHYTOSTANOLS; PHYTOSTEROLS

L2 ANSWER 18 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2003:N0703 FSTA

TI Fat based food products.

IN Lievense, L. C.

PA Lipton; Conopco Inc.; Lipton, USA

SO United States Patent Application Publication, (2003)

PI US 2003134028 A1

PRAI EP 1995-201444 19950601

DT Patent

LA English

AB A fat based food product comprises natural fat components which have a blood cholesterol lowering effect if the foods are used according to normal needs and customs of the consumer. At least one (preferably 2) of tocotrienol, oryzanol and phytosterol is present, and in a preferred embodiment  $\geq 0.1$  weight% of tocotrienol,  $\geq 1$  weight% of oryzanol and  $\geq 0.4$  weight% of phytosterol are present. In a further preferred embodiment, the fat in the product comprises  $\geq 30$  weight%, preferably  $\geq 45$  weight% of PUFA triglycerides. It is claimed that regular consumption of these fat based foods makes a positive contribution to health, especially reduction of blood cholesterol.

CC N (Fats, Oils and Margarine)

CT ANTIOXIDANTS; AROMATIC COMPOUNDS; FATS; FATTY ACIDS; HEALTH; PATENTS; STEROLS; TOCOPHEROLS; ORYZANOLS; PHYTOSTEROLS; PUFA; TOCOTRIENOL

L2 ANSWER 19 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2003:N0412 FSTA

TI A spread enriched with plant sterol-esters lowers blood cholesterol and lipoproteins without affecting vitamins A and E in normal and hypercholesterolemic Japanese men and women.

AU Ntanios, F. Y.; Homma, Y.; Ushiro, S.

CS Med. Dep., SlimFast Foods Co., West Palm Beach, FL 33410, USA. E-mail fntanios(a)slimfast.com

SO Journal of Nutrition, (2002), 132 (12) 3650-3655, 38 ref.

ISSN: 0022-3166

DT Journal

LA English

AB This study investigated whether different initial baseline cholesterol levels modulate the efficacy of a spread enriched with plant sterol-esters (PS) in lowering blood cholesterol in a Japanese population consuming their usual diet. Healthy adults (mean age 45 yr and mean plasma total cholesterol (TC) level 6.5 mmol/l) were recruited to participate in a double-blind trial comprised of a run-in period of 1 wk, followed by 2 intervention periods of 3 wk in a 2 x 2 crossover design and a post-trial follow-up of 3 wk. Volunteers consumed 2 spreads, one enriched with PS (12 g/100 g plant sterols) and a control spread not fortified with PS. Recommended spread intake was 15 g/day (1.8 g of phytosterols /day). Effects on plasma lipids, lipoprotein,  $\beta$ -carotene and vitamins A and E were assessed. Plasma TC and LDL cholesterol (LDL-C) concentration were 5.8 and 9.1% lower, respectively, when subjects consumed the PS spread than when they consumed the control spread ( $P < 0.001$ ). Subjects were divided into 2 groups (normal and mildly cholesterolaemic (TC  $< 5.7$  mmol/l) and hypercholesterolaemic (TC  $\geq 5.7$  mmol/l)). Reductions ( $P < 0.001$ ) in TC and LDL-C due to treatment in the former group were 4.9 and 7.9%, respectively. In the hypercholesterolaemic

group, the reductions ( $P < 0.001$ ) were 7.1 and 10.6%, respectively. The decreases did not differ between normal/mildly cholesterolaemic and hypercholesterolaemic subjects. Plasma apolipoprotein B (apoB) and remnant-like particle (RLP) cholesterol (RLP-C) concentration were lower when subjects consumed the PS spread (44.3 g/l) than the control spread (49.7 g/l). Plasma  $\beta$ -carotene concentration was lower ( $P < 0.001$ ) in subjects consuming the PS spread than in the control. Changes in plasma vitamins A and E levels did not differ after intake of the PS and control spreads. It is concluded that daily consumption of a PS-enriched spread containing 1.8 g phytosterols effectively lowers plasma TC, LDL-C, apoB and RLP-C regardless of baseline plasma TC.

CC N (Fats, Oils and Margarine)  
CT ANTIOXIDANTS; CAROTENES; HEALTH; RETINOIDS; SPREADS; STEROLS; TERPENOIDS; VITAMINS; Nb -CAROTENE; HYPOLIPAEMIC ACTIVITY; PHYTOSTEROLS; VITAMIN A; VITAMIN E

L2 ANSWER 20 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2003:N0025 FSTA

TI How good is the evidence for effects of rice bran oil and rice bran oil components on blood lipid concentrations in humans?

AU Stanley, J.

CS Lincoln Edge Nutrition, The Cottage, Sleaford Rd., Wellingore, Lincoln LN5 0HR, UK. Tel. & fax +44-1522-810624. E-mail john.stanley(a)tri.ox.ac.uk

SO Lipid Technology, (2002), 14 (5) 109-112, 7 ref.

ISSN: 0956-666X

DT Journal

LA English

AB An assessment is presented of evidence suggesting that rice bran oil has hypolipaemic activity in humans. Aspects considered include: rice bran oil composition; human studies published regarding hypolipaemic effects of rice bran oil (5 studies, of which results from 2 are discussed); human trials to investigate hypolipaemic activity of the rice bran oil component,  $\gamma$ -oryzanol (4 trials, of which 1 is used as an example); 2 intervention trials that investigated hypolipaemic effects of phytosterols isolated from rice bran oil; and the single published human study into hypolipaemic activity of rice bran oil tocotrienols.

CC N (Fats, Oils and Margarine)

CT ANTIOXIDANTS; AROMATIC COMPOUNDS; HEALTH; OILS VEGETABLE;

STEROLS; TOCOPHEROLS; HYPOLIPAEMIC ACTIVITY; ORYZANOLS;

PHYTOSTEROLS; RICE BRAN OILS; TOCOTRIENOL

L2 ANSWER 21 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2003:M1825 FSTA

TI Milling fractionation of rye produces different sensory profiles of both flour and bread.

AU Heinio, R. L.; Liukkonen, K. H.; Katina, K.; Myllymaki, O.; Poutanen, K.

CS VTT Biotech., PO Box 1500, FIN-02044 VTT, Finland. Tel. +358-9-456-5178. Fax +358-9-455-2103. E-mail raija-liisa.heinio(a)vtt.fi

SO Lebensmittel-Wissenschaft und -Technologie, (2003), 36 (6) 577-583, 22 ref.

ISSN: 0023-6438

DT Journal

LA English

AB The sensory profile of the different layers of the rye kernel was assessed, and the influence of these milling fractions on the sensory perception of mixed wheat bread was determined. 5 milling fractions were obtained from rye grains (cv. Amilo), and mixed wheat bread samples were baked using 3 of these fractions. Results showed that the milling fraction of rye used affected colour and sensory perception of the flour and bread (where the rye fraction replaced 20% of the wheat flour). Intensity of colour decreased from the bran layer to the endospermic layer. Fractions from the outer bran layers resulted in a bitter, strong flavour and aftertaste, whereas fractions from the inner, endospermic region of the kernel had a mild flavour. The shorts fraction yielded a

bread crumb that was springy, soft and moist in texture, and had a cereal-like flavour. This fraction also contained a level of bioactive compounds (lignans, antioxidants, phenols, phytosterols, minerals, tocotrienols and other vitamins), and could be of use in new applications.

CC M (Cereals and Bakery Products)  
CT BREAD; MILLING; RYE; SENSORY ANALYSIS; WHEAT; RYE BREAD; RYE FLOUR; WHEAT BREAD

L2 ANSWER 22 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2003:M1215 FSTA  
TI Characterization of triterpene alcohol and sterol ferulates in rice bran using LC-MS/MS.  
AU Nianbai Fang; Shanggong Yu; Badger, T. M.  
CS Arkansas Children's Nutr. Cent., 1120 S. Marshall St., Little Rock, AR 72202, USA. Tel. (501) 364-2785. Fax (501) 364-2818. E-mail FangNianbai(a)uams.edu  
SO Journal of Agricultural and Food Chemistry, (2003), 51 (11) 3260-3267, 15 ref.  
ISSN: 0021-8561

DT Journal  
LA English

AB Ferulic acid esters of triterpene alcohols and sterols in rice bran oil have been extensively studied and reported to possess important pharmacological actions. Inconsistent results on the numbers and structures of ferulates have been reported, primarily because of the analytical procedures employed. Conventional methods for analysis of phytosterol content in oil are carried out by characterization of trimethylsilylated derivatives using GC-electrospray ionization (ESI)-MS after saponification of oils or individual compound isolated from oils. This study developed an LC-MS/MS and ESI-MS method for the direct analysis of triterpene alcohol and sterol ester components in the  $\gamma$ -oryzanol of rice bran oil. In addition to verifying the results of previous research, 9 new relatively polar triterpene alcohol and sterol esters were characterized by their retention behaviours in LC and ESI-MS data, from both negative- and positive-ion mode. This is suggested to be the first evidence for the presence of hydroxylated ferulate esters and caffeoate esters as part of  $\gamma$ -oryzanol in rice bran. The method enabled rapid and direct on-line characterization of triterpene alcohol and sterol esters in oils. It is proposed that LC-MS/MS equipped with reverse-phase LC and ESI-MS should be well-suited for identification and quantification of the polar metabolites of phytosterols in biological fluids after consumption of rice bran oil or other oils.

CC M (Cereals and Bakery Products)  
CT ALCOHOLS; ANTIOXIDANTS; AROMATIC COMPOUNDS; ESTERS; HIGH PERFORMANCE LIQUID CHROMATOGRAPHY; MASS SPECTROSCOPY; OILS VEGETABLE; STEROLS; TERPENOIDS; LC; MS; ORYZANOLS; RICE BRAN OILS; TERPENES

L2 ANSWER 23 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2003:A1271 FSTA  
TI Phytosterols, phytostanols, and their conjugates in foods: structural diversity, quantitative analysis, and health-promoting uses.

AU Moreau, R. A.; Whitaker, B. D.; Hicks, K. B.  
CS Crop Conversion Sci. & Tech. Res. Unit, Eastern Reg. Res. Cent., ARS, USDA, 600 East Mermaid Lane, Wyndmoor, PA 19038, USA. E-mail rmoreau(a)arserrc.gov

SO Progress in Lipid Research, (2002), 41 (6) 457-500, 237 ref.  
ISSN: 0079-6832

DT General Review  
LA English

AB The occurrence, structure and health benefits of phytosterols, phytostanols and their conjugates in plant foods is reviewed. Aspects considered include: phytosterol nomenclature; structural diversity and phylogenetic distribution of phytosterols (cholesterol in

plants, distribution and diversity of major C-24 alkyl phytosterols, phytosterols in fruits, vegetables and cereals, function of 24-alkyl phytosterols, steroid saponins and glycoalkaloids, phytoecdysteroids and brassinosteroids); methods for the quantitative analysis of phytosterols and phytostanols (extraction and fractionation, separation of intact phytosterol classes and of molecular species of conjugates, hydrolysis of conjugates and separation of free phytosterols, MS and NMR, enzymic assays); and health promoting effects of phytosterols, phytostanols and their esters (historical perspectives, active forms and mechanism of action of steryl and stanyl esters, clinical studies on phytostanyl esters, phytosteryl esters and free phytosterols and phytostanols, LDL-C lowering efficacy, health claims, reduction in the risk of coronary heart disease, toxicology, anticancer properties and potential benefits, effects on absorption of fat soluble vitamins and antioxidants, dosage levels and frequency, phytosterol and phytostanol products of the past, present and in development).

CC A (Food Sciences)  
CT ANALYTICAL TECHNIQUES; ESTERS; HEALTH; PLANT FOODS; STEROLS; ANALYSIS; PHYTOSTANOLS; PHYTOSTEROLS; STRUCTURE

L2 ANSWER 24 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2003:A0664 FSTA  
TI Antioxidant activity of phytosterols, oryzanol, and other phytosterol conjugates.  
AU Tong Wang; Hicks, K. B.; Moreau, R.  
CS 2312 Food Sci. Bldg., Iowa State Univ., Ames, IA 50011, USA. E-mail tongwang(a)iastate.edu  
SO Journal of the American Oil Chemists' Society, (2002), 79 (12) 1201-1206, 21 ref.  
ISSN: 0003-021X  
DT Journal  
LA English  
AB Antioxidative and antipolymerization activities of phytosterols, oryzanol, ferulic acid esters of sterols, corn fibre oil and rice bran oil were investigated. Commercial soybean oil and distilled soybean oil methyl esters (FAME) were used as substrates for both oxidative stability determination and viscosity analysis after the oil was oxidized. Results showed that the oxidative stability of oil was significantly affected by the type of compounds tested and their concentration (12-60  $\mu$ mol/5 g oil); at low concentration, the various compounds did not improve the oxidative stability of the oil substrates, although the viscosity tended to be reduced slightly. The antipolymerization activity of steryl ferulate was higher at higher concentration than at lower concentration, and steryl ferulate was more effective than oryzanol. Rice bran oil showed very good antioxidative and antipolymerization activities.  
CC A (Food Sciences)  
CT ANTIOXIDANTS; AROMATIC COMPOUNDS; CORN OILS; OILS VEGETABLE; OXIDATION; STEROLS; ANTIOXIDATIVE ACTIVITY; ORYZANOLS; PHYTOSTEROLS; POLYMERIZATION; RICE BRAN OILS  
  
L2 ANSWER 25 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2002:N0476 FSTA  
TI Health promoting constituents in plant derived edible oils.  
AU Beardsell, D.; Francis, J.; Ridley, D.  
CS Inst. for Hort. Dev., Dep. of Natural Resources & Environment, Private Bag 15, Ferntree Gully Delivery Cent. 3156, Australia. Tel. 61 03 9210 9425. E-mail david.beardsell(a)nre.vic.gov.au  
SO Journal of Food Lipids, (2002), 9 (1) 1-34, many ref.  
ISSN: 1065-7258  
DT General Review  
LA English

AB Relationship between vegetable oil components and health is reviewed, focusing on the need to consider oil type (e.g. olive, rapeseed, sunflower), origin and processing-induced changes when assessing health attributes, such as possible cardiovascular and anti-cancer benefits. Individual aspects considered include: triacylglycerol composition of vegetable oils; influence of fatty acid profiles on health effects of vegetable oils; effects of processing on formation of trans fatty acids and reduction of health promoting components; health promoting benefits of antioxidants in vegetable oils; cholesterol lowering effects of plant stanols and sterols; possible cancer protective effect of squalene in olive oils; health and shelf life attributes of other components found in vegetable oils; breeding and selection of plants that produce oils with healthier fatty acid profiles (e.g. low linolenic acid soybean oils); influence of environment and regional and cultural practices on oil properties; use of biotechnology and genetic engineering to alter fatty acid profiles of oilseeds; suggested components for a healthy designer edible oil (e.g. PUFA, monounsaturated fatty acids, squalene, phytosterols, polyphenols, carotenoids and tocopherols); and future research directions.

CC N (Fats, Oils and Margarine)

CT HEALTH; OILS VEGETABLE; REVIEWS; VEGETABLE OILS

L2 ANSWER 26 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2002:J1252 FSTA

TI [Process for stabilization of fresh avocado pulp and manufacture of products, especially a food which is antiatherogenic and protects the myocardium.]

IN Koyazounda, A.

PA Koyazounda, France

SO French Patent Application, (2002)

PI FR 2812792 A1

PRAI FR 2000-10621 20000814

DT Patent

LA French

AB A process is described for stabilization of avocado pulp by osmotic drying in a thin layer at ambient temperature and protection of the osmotically dried product against oxidation by coating with chocolate or an alternative concentrate product. The avocado pulp may be preserved for at least 21 days without spoilage, and may be used in the manufacture of a functional food naturally rich in monounsaturated and polyunsaturated fatty acids, fibre, phytosterols and fructose. Addition of kiwi pulp or other fruit or vegetable products rich in antioxidants, fibre eicosapentaenoic acid or docosahexaenoic acid permits production of a natural dietetic product with antiatherogenic activity and which protects the myocardium.

CC J (Fruits, Vegetables and Nuts)

CT AVOCADOS; DIETETIC FOODS; FRUIT PRODUCTS; FUNCTIONAL FOODS; HEALTH; PATENTS; PULPS; STABILITY; FRUIT PULPS; STABILIZATION

L2 ANSWER 27 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2002:A1441 FSTA

TI Changes in the lipid composition of New Zealand diets.

AU Eyres, L.

CS New Zealand, Nutrition Society of New Zealand Thirty Fifth Annual Conference; Inst. of Food Nutr. & Human Health, Massey Univ., North Shore, Auckland, New Zealand

SO Proceedings of the Nutrition Society of New Zealand, (2000, recd. 2002), 25, 1-9, 17 ref.

ISSN: 0110-4187

DT Conference

LA English

AB Changes in attitudes towards and theories concerning the role of lipids in diets of the population of New Zealand during recent years are examined, in sections covering: cholesterol; phytosterols; saturated

fatty acids; changes in the relative intakes of fatty acids (trans, PUFA and monounsaturated fatty acids); CLA; fast food; and frying fats (oxidized lipids, antioxidants). It appears that a significant proportion of the population has not heeded the nutritional messages of the last 25 yr, so an increasingly sedentary populace consumes too much energy, too much saturated and trans fat, insufficient monounsaturated fatty acids and n-3 PUFA, and has deficiencies in natural antioxidants and their coactivists. [Further papers are covered in the FSTA database and may be traced via the corporate/organizational information field, under New Zealand, Nutrition Society of New Zealand [Thirty Fifth Annual Conference]. See also FSTA (2002) 34 10Aa1430 for an overview of the conference.]

CC A (Food Sciences)

CT CONFERENCE PROCEEDINGS; CONSUMER RESPONSE; DIET; LIPIDS; CONSUMER ATTITUDES; EATING HABITS; NEW ZEALAND

L2 ANSWER 28 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2001(01):S0152 FSTA

TI Truth and misunderstandings regarding the negative health aspects of the additives application in the meat industry.

AU Turubatovic, L.; Miletic, I.; Milanovic-Stevanovic, M.

CS Inst. za Higijenu i Tehnologiju Mesa, 11000 Belgrade, Yugoslavia

SO Tehnologija Mesa, (2000), 41 (1/3) 67-88, 101 ref.

ISSN: 0494-9846

DT General Review

LA English; Serbo-Croatian

AB A review is presented on the possible health effects of additives used in the meat industry. Individual aspects considered include: consumer perception of food additives; reasons for using additives in meat products; studies on the biological and health effects of commonly used chemical additives in the meat industry (nitrites, phosphates, antioxidants (BHA, BHT, propyl gallate), monosodium glutamate, salt); and use of soy products in meat products (health effects of isoflavones, saponins, phytosterols, phytates, proteinase inhibitors, oligosaccharides).

CC S (Meat, Poultry and Game)

CT ADDITIVES; FOOD SAFETY ADDITIVES; FOOD SAFETY ANIMAL FOODS; HEALTH; MEAT; MEAT PRODUCTS; REVIEWS

L2 ANSWER 29 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2001(01):A0111 FSTA

TI Hypocholesterolaemic factors in foods: a review.

AU Silalahi, J.

CS Analysis & Chem. of Food Lab., Dep. of Pharmacy, Univ. of Sumatra Utara, Medan 20155, Indonesia

SO Indonesian Food and Nutrition Progress, (2000), 7 (1) 26-35, 65 ref.

ISSN: 0854-6177

DT General Review

LA English

AB Hypocholesterolaemic factors found in the diet are reviewed. Aspects considered include: effect of dietary lipids on lipid and lipoprotein metabolism; and hypocholesterolaemic agents in foods (including dietary fats, protein, fibre, phytosterols and, flavonoids and antioxidants).

CC A (Food Sciences)

CT DIET; HEALTH; REVIEWS; HYPOLIPAEMIC ACTIVITY

L2 ANSWER 30 OF 34 FSTA COPYRIGHT 2007 IFIS on STN

AN 2000(10):N0549 FSTA

TI Several nutrients contribute to the health benefits of olive oil.

AU Stanley, J.

CS Lincoln Edge Nutrition, The Cottage, Sleaford Rd., Wellingore, Lincoln LN5 0HR, UK. Tel./Fax +44-1522-810624. E-mail john.stanley(a)tri.ox.ac.uk

SO Lipid Technology, (2000), 12 (3) 61-64, 13 ref.

ISSN: 0956-666X  
DT Journal  
LA English  
AB Components of olive oil which contribute to its positive health effects (as perceived in the Mediterranean diet) are discussed, in sections covering: fatty acids and blood cholesterol; phytosterols, squalene and blood cholesterol; and fatty acids, antioxidants and lipid oxidation. Olive oil is the best known source of oleic acid, to which its benefits have traditionally been attributed, but it also contains other compounds with adverse effects on blood cholesterol (squalene) and is less rich than other high-oleic oils (high-oleic acid cv. of sunflower and safflower oils) in phytosterols which also have hypocholesterolaemic effects. Processing and storage can also affect levels of antioxidants, which can minimize low density lipoprotein oxidation; olive oil is also a poor source of polyunsaturated fatty acids.  
CC N (Fats, Oils and Margarine)  
CT DISEASES; FATTY ACIDS; OLIVE OILS; STEROLS; TERPENOIDS; ANTIOXIDANT COMPOUNDS; CARDIOVASCULAR DISEASES; PHYTOSTEROLS; SQUALENE  
L2 ANSWER 31 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2000(07):N0401 FSTA  
TI Frying of food.  
AU Boskou, D. (Editor); Elmadfa, I. (Editor)  
CS 851 New Holland Ave., Box 3535, Lancaster, PA 17604, USA; Technomic Publishing Co. Inc. Price \$124.95  
SO (1999), 256pp. ISBN 1-56676-786-5  
DT Book  
LA English  
AB This book examines the frying of food from the point of view of changes occurring to biologically active constituents and effects of such changes on the stability, performance and nutritive value of frying oil. It focuses on the nature of the frying media and discusses changes to non-glyceride components, especially nutritive and non-nutritive antioxidants. The book is targeted at food and lipid chemists, food technologists and product developers involved in the processing of foods by frying, and those involved in fat and oil research, quality assessment of heated fats and improving dietary fat intake profiles. The book is divided into 11 chapters as follows: Fat and nutrition; Oxidation products and metabolic processes; Formation of free radicals and protection mechanisms in vitro and in vivo; Changes of nutrients at frying temperatures; Enzymatic methods for the study of thermally oxidized oils and fats; Determination of oxidized compounds and oligomers by chromatographic techniques; Nutrient antioxidants and stability of oils (tocochromanols,  $\beta$ -carotene, phyloquinone, ubiquinone 50); Non-nutrient antioxidants and stability of frying oils; Phytosterols and stability of frying oils; Palm oil in frying; and Safety and reliability during frying operations - effects of detrimental components and fryer design features.  
CC N (Fats, Oils and Margarine)  
CT BOOKS; FRYING; OILS; FOODS; FRYING OILS  
L2 ANSWER 32 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2000(04):A0535 FSTA  
TI Feeding the health concerns of the ageing baby-boomers.  
AU Clarke, A.  
SO New Nutrition Business, (1999), 5 (2) 27-34  
ISSN: 1464-3308  
DT Journal  
LA English  
AB As the number of people aged >60 yr increases in the developed world, and birth rates fall, health concerns become ever more important in food marketing, as the 'baby boomer' generation seeks to prevent or at least minimize the effects of ageing on health. A growing interest in

preventing the chronic diseases associated with ageing, and even in reversing them, has fuelled a corresponding growth in sales of functional foods and nutritional solutions. The impact of such demand on the food industries in the USA and the UK is considered, in terms of: basic nutrient status; bone health, Ca and vitamin D; gastrointestinal health - probiotics, dietary fibre and bovine colostrum; heart health - soy, phytosterols and whole grains; oxidative damage and antioxidants; and diabetes (both prevention and management of existing conditions). Ageing and disease is costly to governments and it may be the economic argument which drives nutrition development in this arena. Products are unlikely to be targeted specifically at the elderly, but more likely to be aimed at the prevention of specific conditions. Ca fortified products, cholesterol lowering products and those relating to intestinal health are more likely to succeed in such a market.

CC A (Food Sciences)  
CT HEALTH; POPULATION GROUPS; ELDERLY; FOODS

L2 ANSWER 33 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 1998 (09):J2068 FSTA  
TI Health promoting compounds of vegetables.  
AU Puupponen-Pimia, R.  
CS Available from VTT Information Service, PO Box 2000, FIN-02044 VTT, Finland. Tel. +358 9 456 4404. Fax +358 9 456 4374  
SO VTT Research Notes, (1997), 1865, 73pp., many ref.  
ISSN: 1235-0605  
DT Dissertation  
LA Finnish  
SL English  
AB Phytochemicals present in vegetables, and their associated nutritional and other health benefits are considered. Compounds described include: vitamins, antioxidants, glucosinolates, flavonoids, phytoestrogens and phytosterols. Dietary fibre and non-digestible oligosaccharides, which can promote growth of probiotic bacteria in the gastrointestinal tract, are also mentioned.

CC J (Fruits, Vegetables and Nuts)  
CT HEALTH; NUTRITION; VEGETABLES; PHYTOCHEMICALS

L2 ANSWER 34 OF 34 FSTA COPYRIGHT 2007 IFIS on STN  
AN 1991(04):N0022 FSTA  
TI Analysis of tocopherols and phytosterols in vegetable oils by HPLC with evaporative light-scattering detection.  
AU Warner, K.; Mounts, T. L.  
CS N. Reg. Res. Cent., ARS, USDA, 1815 N. University St., Peoria, IL 61604, USA  
SO Journal of the American Oil Chemists' Society, (1990), 67 (11) 827-831, 33 ref.  
ISSN: 0003-021X  
DT Journal  
LA English  
AB Methods were developed for the separation, detection, and quantification of tocopherols and phytosterols by HPLC with an evaporative light-scattering detector. 4-tocopherols- $\alpha$ ,  $\beta$ ,  $\gamma$  and  $\delta$ - and 4 phytosterols - campesterol,  $\beta$ -sitosterol, brassicasterol, and stigmastanol were analysed in soybean, sunflower, low-erucic acid rapeseed and corn oils. The use of an evaporative light-scattering detector, in conjunction with modification of methods from the literature to prepare and analyse tocopherols and phytosterols by HPLC, showed consistent results between trials and levels of these minor constituents.

CC N (Fats, Oils and Margarine)  
CT ANALYTICAL TECHNIQUES; ANTIOXIDANTS; HIGH PERFORMANCE LIQUID CHROMATOGRAPHY; LIPIDS; OILS VEGETABLE; STEROIDS; STEROLS; TOCOPHEROLS; ANALYSIS; PHYTOSTEROLS; VEGETABLE OILS

=> s phytosterol? and antimicrobial  
638 PHYTOSTEROL?  
5123 ANTIMICROBIAL  
L3 2 PHYTOSTEROL? AND ANTIMICROBIAL

=> d 13 all 1-2

L3 ANSWER 1 OF 2 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2006:L0405 FSTA  
TI Preliminary study on functional component and activities of waste slurry  
from water chestnut plant.  
AU Liu Xin; Zhao Lichao; Zhou Aimei  
CS Coll. of Food Sci., South China Agric. Univ., Guangzhou 510640, Guangdong,  
China  
SO Food Science, China, (2006), 27 (2) 251-256, 7 ref.  
ISSN: 1002-6630  
DT Journal  
LA Chinese  
SL English  
AB Waste slurry from production of water chestnut starch was used as raw  
material to extract, separate and purify a functional component. Crude  
functional compounds were extracted with solvents, followed by separation  
and purification using chromatography to obtain a pure functional  
compound. The chemical composition of the compound was analysed using  
GC-MS. Antimicrobial activity and antibiotic effects of the  
compound were investigated using mice. The functional compound extracted  
from the waste slurry was found to be a cholesterol derivative. It showed  
significant antimicrobial effects on bacteria in vivo and in  
vitro and exhibited anti-inflammatory effects.  
CC L (Sugars, Syrups and Starches)  
CT CHESTNUTS; INHIBITION; MICROORGANISMS; PLANTS; STARCH; STEROLS; WASTES;  
ANIMAL MODELS; ANTIMICROBIAL ACTIVITY; PHYTOSTEROLS

L3 ANSWER 2 OF 2 FSTA COPYRIGHT 2007 IFIS on STN  
AN 2002:S0471 FSTA  
TI Bioactive components - new aspects of applying supplements in the meat  
industry.  
AU Turubatovic, L.; Milanovic-Stevanovic, M.  
CS Inst. za Higijenu i Tehnologiju Mesa, Belgrade, Yugoslavia  
SO Tehnologija Mesa, (2001), 42 (5/6) 377-397, many ref.  
ISSN: 0494-9846  
DT General Review  
LA English; Serbo-Croatian  
AB Application of bioactive components to meat products in order to produce  
functional foods is reviewed with reference to: background to functional  
foods; supplements with antimicrobial activity; suppression of  
the formation of deleterious components and replacement of potentially  
dangerous additives (e.g. nitrites/nitrates); supplements which may reduce  
the proportion of fat or alleviate its negative effect (e.g. direct  
addition of PUFA or use of lecithin); supplements with favourable effects  
on human health (prebiotics and probiotics); and supplements with combined  
effects (soy protein products (isoflavones, saponins, phytosterols  
, phytates, proteinase inhibitors, oligosaccharides) and powdered brewers'  
yeast).  
CC S (Meat, Poultry and Game)  
CT FUNCTIONAL FOODS; MEAT PRODUCTS; NUTRITIONAL VALUES; REVIEWS

=> s phytosterol? and antimicrobial?  
638 PHYTOSTEROL?  
5267 ANTIMICROBIAL?  
L4 2 PHYTOSTEROL? AND ANTIMICROBIAL?

=> s phytosterol and antimicrobial

270 PHYTOSTEROL

5123 ANTIMICROBIAL

L5 0 PHYTOSTEROL AND ANTIMICROBIAL

=> s phytosterol? and anti?microbial

'?' TRUNCATION SYMBOL NOT VALID WITHIN 'ANTI?MICROBIAL'

The truncation symbol ? may be used only at the end of a search term. To specify a variable character within a word use '!!', e.g., 'wom!n' to search for both 'woman' and 'women'. Enter "HELP TRUNCATION" at an arrow prompt (=>) for more information.

=> s phytosterol? and anti!microbial

638 PHYTOSTEROL?

0 ANTI!MICROBIAL

L6 0 PHYTOSTEROL? AND ANTI!MICROBIAL

=> s phytosterol? and anti!bacterial

638 PHYTOSTEROL?

0 ANTI!BACTERIAL

L7 0 PHYTOSTEROL? AND ANTI!BACTERIAL

=> s phytosterol? and antibacterial

638 PHYTOSTEROL?

3208 ANTIBACTERIAL

L8 2 PHYTOSTEROL? AND ANTIBACTERIAL

=> d 18 all 1-2

L8 ANSWER 1 OF 2 FSTA COPYRIGHT 2007 IFIS on STN

AN 2003:N0529 FSTA

TI Sphingolipids in the human diet - occurrence and implications.

AU Hellgren, L. I.

CS Biocentrum-DTU, Tech. Univ. of Denmark, DK-2800 Lyngby, Denmark. Tel. +45-4525-2759. Fax +45-4588-6307. E-mail lih(a)biocentrum.dtu.dk

SO Lipid Technology, (2002), 14 (6) 129-133, 6 ref.

ISSN: 0956-666X

DT Journal

LA English

AB Sphingolipids are discussed with particular reference to dietary sources of these lipids and their beneficial health properties. Aspects considered include: molecular structures of the sphingolipids; sphingolipids content of the diet and of various foods (dairy products, meat and fish, egg, vegetables and cereals); intracellular signalling roles of sphingosine and ceramide, digestion products of sphingolipids, and restriction of these molecules and their effects to the gastrointestinal tract; the protective effect of sphingolipids against colon cancer; the reduction by sphingolipids of cholesterol absorption and synthesis; inhibition of foodborne bacterial pathogens by sphingolipids; suggested further research into the combined effects of sphingolipids and phytosterols on plasma cholesterol concentration

CC N (Fats, Oils and Margarine)

CT BACTERIA; HEALTH; INHIBITION; LIPIDS; ANTIBACTERIAL ACTIVITY; FOODS; SPHINGOLIPIDS

L8 ANSWER 2 OF 2 FSTA COPYRIGHT 2007 IFIS on STN

AN 2000(12):A1893 FSTA

TI Phytochemicals: nutraceuticals and human health.

AU Dillard, C. J.; German, J. B.

CS Correspondence (Reprint) address, J. B. German, Dep. of Food Sci. & Tech., Univ. of California, Davis, CA 95616, USA. E-mail jbgerman(a)ucdavis.edu

SO Journal of the Science of Food and Agriculture, (2000), 80 (12) 1744-1756, many ref.

ISSN: 0022-5142

DT General Review

LA English

AB Phytochemicals are reviewed with reference to their use in nutraceutical foods to provide health benefits to humans. Aspects considered include: classification and health benefits of selected phytochemicals (polyphenols, terpenoids (tocotrienols, tocopherols, carotenoids, limonoids, phytosterols), phenols (flavonoids, catechins, gallic acids, isoflavonoids, anthocyanidins), alkaloids and other nitrogen-containing metabolites (glucosinolates, indoles) and fibre); use of phytochemicals for treatment of specific conditions or diseases (phytochemicals in ethnobotanicals; use of phytochemicals in clinical applications, animal studies and cells in culture or in vitro; in vitro testing of anti-psychotic phytochemicals; analgesic and anti-inflammatory effects of phytochemicals in animals; antibacterial, antiparasitic and antiviral effects of phytochemicals; and anti-cancer testing of phytochemicals); regulatory aspects of nutraceuticals (impact of the Nutrition Labeling and Education Act (1990) and the Dietary Supplement Health and Education Act (1994)); and future prospects (increasing research into medicinal properties of phytochemicals, potential growth of the food industry to accommodate nutraceutical foods, debate over nutritional labelling, marketing of nutraceutical foods).

CC A (Food Sciences)

CT HEALTH; NOVEL FOODS; REVIEWS; NUTRACEUTICAL FOODS; PHYTOCHEMICALS

=> s phytosterol? and antifungal

638 PHYTOSTEROL?

1035 ANTIFUNGAL

L9 0 PHYTOSTEROL? AND ANTIFUNGAL

=> s phytosterol? and preservative

638 PHYTOSTEROL?

2259 PRESERVATIVE

L10 0 PHYTOSTEROL? AND PRESERVATIVE